	•	,		OIP SEP 0 9	2002		U.S. Patent and Trademark	c Office; U.S. D	PTO/SB/08A (10/ EPARTMENT OF	01) (modified)	
Substitut	e for	form 1449/	VPTO	PATT	J. F.	Appl	ication Number	09/466,325	;		
		NAMA TI		ISCE OF	WATE TO THE PARTY OF THE PARTY	Filin	g Date	December	17, 1999		
						First	Named Inventor	Cynthia Briscoe			
517				APPLIC		Art l	Jnit	1743			
	(us	e as many	/ SHEELS	as necessai	<i>y)</i>	Examiner Name		Brian J. Sines			
Sheet		1	of	8		Attorney Docket Number A-70143			RMS/RMK		
- 41		· _ ·		<u> </u>	U.S. PAT	ENT	DOCUMENTS				
*Examiner	Cite No.		UMENT N - Kind Cod	UMBER le (if known)	Publication MM-DD-Y	Date	Name of Patente Applicant of Cited Do	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear			
BUD	1.	US- 3,	,293,072	}	12/1996		Doolittle et al.				
12/10	2.	US- 3,506,473			04/1970		Ettre et al.		4		
	3.	US- 3,					Ettre et al.		20	RECT	
6 1	4.	US- 3,	,598,679)	08/1971		Ettre et al.		= 15	3	
10/1/	5.	US- 3,	,948,706	3	04/1976		Schmeckenbecher		10		
	6.		,956,052		05/1976		Koste et al.				
	7.		,991,029		11/1976		Adelman		ROOM	3	
	8.	US- 4,	,035,613)	07/1977		Sagawa et al.		OH		
0 10	9.	US- 4,	,118,237	,	10/1978		Beall et al.				
	10.	-	,523,121		061985		Takahashi et al.		7		
Ø 1.	11.		,551,357		11/1985		Takeuchi				
101.10	12.		,610,741		09/1986		Mase et al.				
A.	13.	US- 4 ,	,806,295	.	02/1989		Trickett et al.				
<u> II</u>				FC	REIGN P	ATE	NT DOCUMENTS				
		FOREIGN	PATENT	DOCUMENT							
*Examiner	Cite No.	Country Code:		r - Kind Code known)	Publication D	,	Name of Patentee or	Where Rele	olumns, Lines, evant Passages	TRANSLATION	

		FOR	FOREIGN PATENT DOCUMENT						
*Examiner	Cite No.	Coun	•	Number - Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	TRANSL	ATION NO
BJ. 1	14.	JP		3-148196	06/1991	Toray Eng. Co. Ltd.			
14/1/	15.	JP	٠.	63-239999	10/1988	NGK Insulators Ltd.			
	16.	JP	_	4-114961	04/1992	Mitsubishi Materials Corp.			
	17.	JP	~	2-166793	06/1990	Fujitsu Ltd.			
	18.	JP	•	8-267421	10/1996	KK Sumitomo Kinzouku Electro			
AL	19.	JP	,	5-267844	10/1993	NGK Insulators Ltd.			
9/	20.	JP	•	2-219603	09/1990	Mitsubishi Mining & Cement Co. Ltd.			

EXAMINER SIGNATURE William 1928/2

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

SEP 0 9 2002	PTO/SB/08A U.S. Patent and Trademark Office; U.S. DEPARTMEN
<u> </u>	

Substitut	te for for	rm 1449A/PTO	RADEMARK	Application Number	09/466,325							
INIE		AATION F	DISCLOSURE	Filing Date	December 17, 1999							
			APPLICANT	First Named Inventor	Cynthia Briscoe	黑						
31/		as many sheets		Art Unit	1743	. ?	\					
	(use	as many sneets	as necessary)	Examiner Name	Brian J. Sines		Á					
Sheet	2	of	8	Attorney Docket Number	A-70143	2	0					
	•	OTHER	DOCUMENTS - NON	-PATENT LITERATURE	DOCUMENTS							
*Examiner	Cite No.	Include n	name of the author (in CAPITAL (book, magazine, journal, serial	LETTERS), title of the article (when a , symposium, catalog, etc.), date, pag	appropriate), title of the je(s), volume-issue	TRANSI						
	23	Rurne et al. 4		er, city and/or country where publisher r DAN Analysis Device", Sci		YES	NO					
BI.	7	282:484-487 (1998).									
	24. ~	measurement 518:73-79 (19	Espinoza-Vallejos et al., "MESO (Intermediate)-Scale electromechanical systems for the neasurement and control of sagging in LTCC structures", Med. Res. Soc. Symp. Pros. 518:73-79 (1998).									
9.	25.	Ghandi, "VLSI Fabrication Principles", A Wiley-Interscience Pub., Ch. 10 (1983).										
	26.	Gongora-Rubio et al., "Overview of low temperature co-fired ceramics tape technology for meso-system technology (MsST)", Sensors and Actuators A: Physical. Vol. 89, Issue 3, pp. 222-241 (2001).										
	27. 1	valve realized		e Electro-magnetically actua of the SPIE Conference on N 1999).								
9/1	28.		oio, et al., "A simple ther Quimica Analitica, 18:3	rmistor based flow sensor u 0-31 (1999).	sing the LTCC-ML							
PS	29. 1	technology fo		of low temperature co-fired mple thermistor based flow								
G.L	30.§**			on sintering processing an , Solid State Phenomina, Vo								
01	31.	fluid flow thro		onduits in ceramic tapes an licro-Electro-Mechanical Sy								
13/5.	32. 🤸			imeter", Nat. Biotechnol. 16								
GJ.	33.	Liu, et al., "St (1993).	tudy of thick-film pH ser	nsors", Sensors and Actuate	ors, Vol. 13-14:566-567							
EXAMI	EXAMINER SIGNATURE Sine Sine 10/28/20134.											
	*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through											

1091951



Substitute for	form 1449	A/PTO 🌾	En.	at co	Application Number		09/466,325			
			TRADEMA		Filing	g Date	December	17, 1999	1	
			DISCLOS	i	First	Named Inventor	Cynthia B	riscoe 🛒 🦿	ń	
			APPLIC		Art U	Jnit	1743	2	过	
(us	e as man	y Sileeis	s as necessar	<i>y)</i>	Exan	niner Name	Brian J. Si	ines	TOTAL PO	
Sheet	3	Of	8		Attor	rney Docket Number	A 70449 1 (%)			
			<u> </u>	US PAT	FNT	DOCUMENTS	A-70143			
*Examiner Zite			U MADED					Pages, Columns, Lines,		
*Examiner Cite		CUMENT N r - Kind Cod	NUMBER de (if known)	Publication MM-DD-YY		Name of Patented Applicant of Cited Do		Where Relevant Relevant Figu		
/35.		4,833,000		05/1989		Trickett et al.				
36.	US- 4	4,929,295	5	05/1990		Kohno et al.				
ON 1 87.	US- 4	4,939,021		07/1990		Aoki et al.				
38.	US- 4	4,985,098	3	01/1991		Kohno et al.				
//39.	US- 4,991,283		02/1991		Johnson et al.					
40.	US- 5,008,151			04/1991		Tominaga et al.				
JA 1/41.	00	5,089,071		02/1992		Tominaga et al.				
A /42.	US- 5,174,842			12/1992		Hamuro et al.				
43.	US- 5,176,771			01/1993		Bravo et al.				
1 14		5,254,191		10/1993		Mikeska et al.				
45.		5,261,986		11/1993		Kawabata et al.				
146.	US- 5	5,265,327	,	11/1993		Faris et al.				
10 A 197.		5,271,150		12/1993		Inasaka				
48.	US- 5	5,304,487	<i>,</i>	04/1994		Wilding et al.				
			FC	OREIGN P	ATEN	NT DOCUMENTS]
V		··	= 001114FNT							
	Country	1	DOCUMENT	4			Danes Co	olumns, Lines,	TRANSLA	∆TION
*Examiner Cite Initial No.	Country Code:		er - Kind Code if known)	Publication Da	ı	Name of Patentee or Applicant of Cited Document	Where Rele	evant Passages Figures Appear		
A) 49.	JP 、	63-421	147	02/1998		Shinko Electro Ind.	OI L'GIGARIT	Figures Appear	YES	NO
IAH 1					С	Co. Ltd.				
50.	JP .	53-492		05/1978		rujitsu Ltd.	_			
51.	JP 、	6-2909		10/1994		Noritake Co. Ltd.				
52.	JP _			04/1994		litachi Ltd.				
53.	JP ^	8-1084	122	04/1996	N	NGK Insulators Ltd.	<u> </u>			
EXAMINER	SIGNATU	RE /	mian/	Sini	DATE CONSIDERED /6/28/2002					
	EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through itation if not in conformance and not considered. Include copy of this form with next communication to applicant.									



Substitute for	form 1449A/	РТО	& TRADEMARY	Application Number	09/466,325					
INFO		N D		Filing Date	December 17, 1999					
			ISCLOSURE	First Named Inventor	Cynthia Briscoe	_				
			APPLICANT	Art Unit	1734	RE				
(u.	se as many s	sneets	as necessary)	Examiner Name	Brian J. Sines	3	7			
Sheet	4	Of	8	Attorney Docket Number	A-70143	-	7			
	OTH	IER C	OCUMENTS - NON	I-PATENT LITERATURE	appropriate), title of the e(s), volume-issue	3	0			
*Examiner Ate	Ir	iclude na	ame of the author (in CAPITAL	LETTERS), title of the article (when a	appropriate), title of the	TRANSL	ATION			
Initials No.		item (i		, symposium, catalog, etc.), date, pag er, city and/or country where publishe	d d	YES	NO			
B 54.	- Madou,	"Fund	amentals of MicroFabr	ication", 498-502 (1979).	· ·					
55.		Man et al., "Microfluidic Plastic Capillaries on Silicon Substrates: A New Inexpensive Technology for Bioanalysis Chips", IEEE MEMS Conference, 311-316, (1997).								
56.			casting: The basic pro amic Bulletin, 69(6):10	cess for meeting the needs 22-1026 (1990).	of the Electronics					
57.		Topfer, "Chapter 3: Technology", Thick-Film Microelectronics 40-59, (1977).								
58.	Circuits	. Pp. 3	3-36 (1977).	ick film materials", reprinte						
59. J. J.				n of low temperature co-fire ", Quimica Analitica, 19(sup						
60.				Cell Lysis, Multiplex PCR An hemistry, 70:158-162 (1998).						
61.	Wiranto 3242:59			apillary Columns on Silicon	", Proceedings of SPIE,					
EXAMINER	SIGNATURE	1	Man Sine	DATE CONSIDERED	10/28/2002					
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.										

PTO/SB/08A (10/01) (modified)
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitut	e for	form 1449A	/PTO	RADEN	Parce	Application Number		09/466,325				
	^ -) NI D	TRADEN		Filing	g Date	December	17, 1999			
				ISCLOS	1	First	Named Inventor	Cynthia B	riscoe			
31/				APPLIC		Art U	Jnit	1734				
	(us	e as many	sneets	as necessar	<i>y)</i>	Exan	niner Name	Brian J. Si	nes			
Sheet		5	of	8		Attor	rney Docket Number	A-70143	A-70143			
		· · · · · · · · · · · · · · · · · · ·	•	A	U.S. PAT	TENT DOCUMENTS						
*Examiner)	Cite	DOCI	JMENT N	IIIMPED					Pages, Columns, Lines, Where Relevant Passages or			
Initials	No.			le (if known)	Publication MM-DD-Y		Name of Patente Applicant of Cited Do		Relevant Figu			
(X)	62.	US 5,	312,674	Ì	05/1994	**	Haertling et al.					
7//	63.	US- 5 ,:	358,593	3	10/1994		Hamuro et al.					
	64.	US- 5 ,4	435,875	5	07/1995		Saitoh et al.					
	65.	US- 5,4	478,420)	12/1995		Gauci et al.					
PAY i	66.	US 5,4	480,614)	01/1996		Kamahori		TC	ত্ ৰ		
	67.	US- 5,534,092		07/1996		Ogawa et al.		上岛历				
3 (1)	68.	US- 5,534,328		07/1996	Ashmead et al.		- 19		,□			
12/1	69.	US- 5,538,582		07/1996		Natarajan et al.) 100 100	' \fi			
	70.	US- 5,540,884		07/1996		Yi-Hung Chiao		L B	0			
	71.	US- 5,	565,729)	<u> </u>		Faris et al.		1300%			
	72.	US- 5,	585,069)	12/1996 Zanzucchi et al.			;				
	73.	US- 5,	595,712	2	01/1997 Harbs		Harbster et al.		1			
Allo	74.	US- 5,0	601,673	3	02/1997		Alexander					
O.S.	75.	US- 5,0	603,351		02/1997		Cherukuri et al.					
	76.	US- 5,0	607,535	5	03/1997		Tsukada et al.					
	77.	US- 5,0	611,214	I	03/1997		Wegeng et al.					
				FC	REIGN P	ATEN	NT DOCUMENTS	.				
				DOCUMENT				Panes Co	olumns, Lines,	TRANSLA	ATION	
*Examiner	Cite No.	Country Code:		er - Kind Code f known)	Publication D		Name of Patentee or Applicant of Cited Document	Where Rei	evant Passages Figures Appear			
	78.	JP ~	4-1879	95	01/1992		Fujitsu Ltd.	OI Relevant	- Iguico Appeal	YES	МО	
	79.	JP	6-1521		05/1994		Nippon Cement KK					
	80.			05/1990		Matsushita Electric						
1	L		\)	//	1	Ind. Co. Ltd.	1	/			
ÈXAMII	NER	SIGNATUR	E	Man	Jeni		DATE CONSIDERED	10/28	12002			
*EXAM citation	*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.											



Substitute for form 1449A/PTO

6

Sheet

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

of

8

Application Number 09/466,325

Filing Date December 17, 1999

First Named Inventor Cynthia Briscoe

Art Unit 1734

Examiner Name Brian J. Sines

 Attorney Docket Number	A-70143

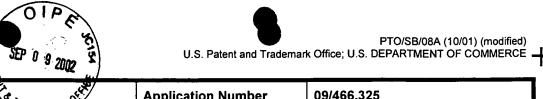
			U.S. PATENT	DOCUMENTS	
*Examiner	Cite No.	DOCUMENT NUMBER Number - Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	81.	US- 5,614,053	03/1997	Toudo et al.	
(1) (1)·	82.	US- 5,632,876	05/1997	Zanzucchi et al.	RI
	83.	US- 5,639,423	06/1997	Northrup et al.	
	84.	US- 5,639,508	06/1997	Okawa et al.	500
	85.	US- 5,646,039	07/1997	Northrup et al.	2000
	86.	US- 5,676,788	10/1997	Natarajan et al.	22 23
	87.	US- 5,681,410	10/1997	Takeuchi et al.	007
61	88.	US- 5,683,535	11/1997	Karr	
	89.	US- 5,707,476	01/1998	Bezama et al.	:
11/	90.	US- 5,720,927	02/1998	Cripe et al.	
The state of the s	91.	US- 5,728,244	03/1998	Nanataki et al.	
CB /	92.	US- 5,746,874	05/1998	Natarajan et al.	
	93.	US- 5,753,060	05/1998	Haruiko Mori	

FOREIGN PATENT DOCUMENTS

		FOREIGN	PATENT DOCUMENT						
*Examiner	7 Cite	Country Code:	Number - Kind Code (if known)	1	Name of Patentee or	Pages, Columns, Lines, Where Relevant Passages	TRANSL	ATION	
Initial	No.	0000.	(ii kiiowii)		Applicant of Cited Document	or Relevant Figures Appear	YES	NO	
YM	94.	WO _ 00/21659		04/2000	Motorola, inc.				
	95.	wo -	01/35484	05/2001	The Trustees of the University of Pennsylvania				
THE SA	96.	JP, ,	7-289886	11/1995	Hokkaido Prefecture	_	□ .		
	97.	EP -	0313090	04/1989	Asahi Kogaku Kogyo Kabushiki Kaisha				
HH,	98.	EP .	0649008 A2	10/1994	NGK insulators, Ltd.				
/EXAM	INER	SIGNATUR	RE Duan	Line	DATE CONSIDERED 1928 2002				

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.





Substitute	for	form 1449A	VPTO	TRADÉMAR!	City	Appli	lication Number	09/466,325	;			
INIEC	7 D	RA A TIA		ISCLO		Filing	g Date	December	17, 1999			
				APPLI		First	Named Inventor	Cynthia B	riscoe			
				as necessar		Art U	Jnit	1734		_		
	(us	e as many	SHEELS	as necessar	y)	Exan	niner Name	Brian J. Si	nes	-		
Sheet		7	of	8		Attor	rney Docket Number	A-70143	A-70143			
					U.S. PAT	ENT DOCUMENTS						
*Examiner C	Cite	DOC	JMENT N	UMBER	Publication	Date	Name of Patente	e or	Pages, Colur Where Relevan			
ρ ρ	No.			de (if known)	MM-DD-Y		Applicant of Cited Do		Relevant Figu			
1/1/2	99.	-	759,320		06/1998		Natarajan et al.					
14/1/	100		779,833				Cawley et al.					
WH //	101		785,800		07/1998		Natarajan et al.					
<i>(20</i> /2//).	102	00	792,379		08/1998		Dai et al.					
		US 5,795,422			l		Chatterjee et al.					
W/214 P/	104	00-			08/1998 Koripella et al.			0.	D			
V AG+ 11	105				09/1998		Wegeng et al.			ECEV		
2021	106	US- 5,821,181		10/1998		Bethke et al.) <u> </u>	<u>H</u>			
	107	-	842,106				Thaler et al.			\leq		
WEST	108	00	855,803		01/1999 Bailey et al.			2002 11_ R	Ö			
9182	109	US- 5,	856,174		01/1999		Lipshutz et al.][7] ROOM			
	110	US- 5 ,	858,193	3	01/1999		Zanzucchi et al.		م ل سه			
	111	US- 5,	858,195	5	01/1999		Ramsey			·		
1	112	US- 5 ,	860,202	?	01/1999		Okawa et al.					
ו אילו אילוו	113		863,708	3	01/1999		Zanzucchi et al.					
12/1/2	114	US- 5 ,	906,723	3	05/1999		Mathies et al.					
				FC	DREIGN P	ATEN	NT DOCUMENTS	T		T		
		FOREIGN	PATENT	DOCUMENT								
	Cite No.	Country Code:		r - Kind Code known)	Publication D		Name of Patentee or Applicant of Cited Document	Where Rele	olumns, Lines, evant Passages Figures Appear	TRANSL/ YES	NO	
2 1	115	EP ,	07443	89	11/1996	N	NGK Insulators, Ltd.	1				
1	116	JP 、	61-288	3154	12/1986		Yokogawa Electric					
region					1	C	Corporation				\vdash_{\sqcap}	
					<u> </u>			1/25/2				
EXAMINE	EXAMINER SIGNATURE / Main Sun DATE CONSIDERED /0/25/2002											

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitut	te for	form 1449A	VPTO	THE STATE OF THE S		Appli	ication Number	09/466,325	;		
	·	RAAT!	0 N. F	TRADEMA		Filing	Date	December	17, 1999		
				DISCLO		First	Named Inventor	Cynthia B	riscoe		
31/				APPLIC		Art U	nit	1734			
	(us	e as many	sneets	s as necessar	<i>y)</i>	Exam	niner Name	Brian J. Si	nes		
Sheet		8	of	8		Attor	ney Docket Number	A-70143			
	•				U.S. PAT	ENT	DOCUMENTS				
*Examiner	Cite No.			NUMBER ode (if known)	Publication MM-DD-Y	Date	Name of Patente Applicant of Cited Do		Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear		es or
DSO	117	US 5 ,	922,59	1	07/1999	***	Anderson et al.				
AOIA.	118	US- 5 ,	939,29	1	08/1999		Loewy et al.				
ACISA	119	US- 5 ,	939,31	2	08/1999		Baier et al.				
(CAS)	120	00	958,69		09/1999		Nikiforov et al.		10		
	121		961,93		10/1999		Chaterjee et al.		日日日		
	122			10/1999		Ghosh et al.		RECEIVED STP 10 76			
	123			10/1999		Chatterjee et al.		Ö	=		
	2124	US- 5,971,355		10/1999		Bjegelsen et al.			3		
Com	7 125			11/1999		Chatterjee et al.		700%			
PPI	126		985,11		11/1999		Zanzucchi et al.				
A A	127		993,75		11/1999		Ghosh et al.	<u> </u>			
GN	128	-	043,08		04/2000		Lipshutz et al.				
O/S	129	-	074,82	.7	06/2000		Nelson et al.				
4		US-			******						
		US-									
		1		FC	DREIGN P	ATEN	IT DOCUMENTS	 		Π. —	
				T DOCUMENT						TRANSLA	ATION
*Examiner	Cite No.	Country Code:		er - Kind Code if known)	Publication D	1	Name of Patentee or	Where Rele	olumns, Lines, evant Passages	l <u></u>	T
ITIDAI	NU.				MM-DD-YY	YY A	Applicant of Cited Document	or Relevant	Figures Appear	YES	NO
											屵
•					1						
									<i>j</i>		
EXAMII	NER	SIGNATUF	RE /	man/	Jui		ATE CONSIDERED	19/28/	2002.		
							itation is in conformand of this form with next con			line thro	ough